

The Ohio Journal of Science

Vol. XX

NOVEMBER, 1919

No. 1

REPORT OF THE TWENTY-NINTH ANNUAL MEETING OF THE OHIO ACADEMY OF SCIENCE

EDWARD L. RICE, *Secretary*.

The Twenty-ninth Annual Meeting of the Ohio Academy of Science was held at Ohio State University, Columbus, Ohio, May 29 to 31, 1919, under the presidency of Professor Maynard M. Metcalf. Seventy-nine members were registered as in attendance; forty new members were elected.

On invitation of the Academy, a meeting of the psychologists of the State was held in connection with the Academy meeting, for the presentation of papers and the consideration of the formation of a Section for Psychology in the Academy. The organization of the section was accomplished, and the titles of papers presented are included in the program of the meeting of the Academy.

At the close of the formal session, the geologists, under the leadership of Professors J. E. Hyde and T. M. Hills, made an excursion to Newark for the study of glacial physiography and the Upper Waverly formation, while Professor W. M. Barrows conducted a zoological and botanical excursion to Sugar Grove

GENERAL PROGRAM

THURSDAY, MAY 29.

- 2:00 P. M. Business Meeting.
 3:30 P. M. Reading of Papers, General Session.
 6:00 P. M. Dinner, followed by Address of the President, Professor Maynard M. Metcalf, Oberlin College, "The Scientific Spirit."
 8:30 P. M. Informal Social Gathering.

FRIDAY, MAY 30.

- 9:00 A. M. Reading of Papers, Sectional Session.
 12:30 P. M. Luncheon.
 2:00 P. M. Adjourned Business Meeting.
 3:00 P. M. Reading of Papers, General Session.
 4:30 P. M. Demonstrations.
 6:00 P. M. Supper.
 7:30 P. M. Public Lecture by Mr. David Carroll Churchill, Oberlin, "Airplanes, Present and Future."
 8:30 P. M. Informal Social Gathering and Inspection of Demonstrations.

SATURDAY, MAY 31.

Excursions.

MINUTES OF BUSINESS MEETINGS

The first business session was called to order by President Metcalf at 2:00 P. M., on Thursday, May 29. An adjourned session was held at 2:00 P. M. on the following day.

The appointment of the following committees for the meeting was announced by the chair:

Committee on Membership—F. C. Blake, G. D. Hubbard, L. B. Walton.

Committee on Resolutions—T. C. Mendenhall, C. G. Shatzer, E. L. Fullmer.

Committee on Necrology—C. E. O'Neal, E. L. Rice.

The following Auditing Committee was elected by the Academy: J. H. Schaffner, R. C. Osburn.

The following Nominating Committee was elected by the ballot of the Academy: F. L. Landacre, G. F. Lamb, T. C. Mendenhall.

Report of the Secretary

The following report by the Secretary was received and ordered filed:

DELAWARE, OHIO, May 26, 1919.

To the Ohio Academy of Science:

In addition to the work done in conjunction with the Executive Committee (covered in the report of that Committee) and with the Program Committee, the Secretary has conducted the usual routine work of his office.

A brief report of the Twenty-eighth Annual Meeting was prepared for "Science," and appeared in the number for September 13. The complete report has appeared in the April number of the Ohio Journal of Science and in the Proceedings of the Academy. Announcement of the current meeting was sent to the Ohio State Journal, Columbus Dispatch, and Columbus Citizen.

In connection with the filling out of a questionnaire from another Academy, it became necessary for the Secretary to compile data as to the distribution of our membership in the various sciences. The figures, although only an approximation, are not without significance and may be of interest to the Academy. Probably some members who are classed under Zoology and Botany belong rather in the group of Medical Sciences, not having revised their classification since the foundation of the section of Medical Sciences. The figures are as follows:

Zoology, 79; Botany, 66; Geology, 40; Physics, 29; Medical Sciences, 16; Chemistry, 6; Mathematics, 4; Unclassified, 18.

The Secretary has commenced to collect data for a permanent record of the war activities of the Academy membership. The returns are too incomplete to justify a report at this time. If the undertaking is approved, it is desirable that a special committee be appointed for its completion and that the Academy authorize the publication of the completed roll.

Two years ago the Academy authorized the reprinting of the Constitution and By-Laws and appointed a committee for this purpose. Owing to an unusual number of pending amendments the committee took no action. Does the Academy wish a reprinting in connection with the report of this meeting? Or is it desirable to wait until 1920 (Thirtieth Annual Meeting) and then reprint regularly at five year periods? The last printing of the Constitution was in 1913; about a dozen amendments have been enacted since that date.

The circular of information is now out of print. Does the Academy desire to have it revised and reprinted? If so, are there any suggestions as to changes in form or content?

Respectfully submitted,

EDWARD L. RICE, *Secretary*.

Report of the Treasurer for the Year 1918-19

The report of the Treasurer was received as follows, and referred to the Auditing Committee, whose report is appended.

For the year since our last annual meeting, the receipts, including balance from last year, have amounted to \$481.85, and the expenditures to \$357.70, leaving a cash balance of \$124.15.

RECEIPTS.

Balance from last year	\$201.35
Membership dues	280.50
	<hr/>
	\$481.85

EXPENSES.

Miscellaneous expenses	\$ 69.70
190 subscriptions to the Ohio Journal of Science	190.00
Publication of Annual Reports for 1916-17	98.00
Balance, May 30, 1919	124.15
	<hr/>
	\$481.85

Respectfully submitted,

JAMES. S. HINE, *Treasurer.*

October 15, 1919.

These accounts have been audited and found correct.

RAYMOND C. OSBURN,
JOHN H. SCHAFFNER,
Auditing Committee.

Report of the Executive Committee

The report of the Executive Committee was received as follows and ordered filed.

May 29, 1919.

To the Ohio Academy of Science:

A meeting of the Executive Committee was held in Columbus, December 7, 1918, with all members in attendance. A second meeting was held this morning, with the following members present: Metcalf, Osburn, Walton and Rice. Aside from these meetings a considerable amount of business has been transacted through correspondence.

After careful consideration of the proposal to restrict the membership of the Academy to those engaged in productive scientific work, presented by Dr. Mendenhall at the last Annual Meeting and referred to the Executive Committee, the Committee makes the following recommendations: (1) That a class, to be known as Fellows, be created from the members who are doing productive scientific work; (2) that

the selection of Fellows be made by the Executive Committee and the Vice-Presidents of the various sections; (3) that eligibility to office be limited to Fellows. It is hoped in this way to secure the objects of Dr. Mendenhall's proposition without sacrificing the present popular and democratic character of the Academy. A straw vote of members not expecting to attend the present meeting shows 27 in favor of the change, 1 against it and 14 neutral or in doubt. The substance of these recommendations will be presented in the form of amendments of the Constitution for action later in the meeting.

An invitation to hold the Annual Meeting for 1919 in London was was received last year from Mrs. Katharine Dooris Sharp, seconded by the local Board of Trade. After a somewhat extended correspondence it was decided that it would be difficult, if not impossible, to secure the needful hotel and meeting accommodations in London, and the matter was dropped by mutual consent.

Correspondence was also conducted through the Secretary relative to the possibility of a joint meeting with the Indiana Academy; but this project was given up, at least for the present year, largely because of the fact that the spring meeting of the Indiana Academy is wholly a field meeting. It seemed unwise to omit the only opportunity of the year for the reading of papers in the Ohio Academy. As noted in the preliminary announcement of this meeting, the Indiana Academy extended a very cordial invitation to the members of the Ohio Academy to join them in their field meeting of last week.

The ultimate decision concerning time and place of the meeting is already known to the Academy.

The Executive Committee directed the Secretary to renew correspondence with the psychologists of the state with a view to the establishment of a Section of Psychology. A partial result of this correspondence is seen in the psychological titles listed in the program of the meeting; it is hoped that a further result will be seen tomorrow morning in the organization of the Section of Psychology.

The resignation of Prof. Samuel R. Williams from the Vice-Presidency for Physics, because of sabbatical leave and prospective absence from the state, was presented to the Executive Committee, and Prof. S. J. M. Allen was appointed to fill the vacancy.

Twelve members have been elected by the Executive Committee since the last annual meeting. The names will be presented later for ratification by the Academy.

The Executive Committee unites in recommending two changes in the financial plan of the Academy—the amendment of the By-Laws to increase the annual dues from \$1.50 to \$2.00, and the authorization by the Academy of the payment of traveling expenses of officers and committee members attending regularly authorized committee meetings not held in connection with the Annual Meeting of the Academy.

The Committee also unites in recommending the rescinding of the By-Law requiring the Nominating Committee to present a double slate of nominations for officers.

At the meeting held this morning the President of the Academy presented correspondence with Professor J. McKean Cattell relative to an affiliation of the Ohio Academy with the American Association for the Advancement of Science, the affiliation to permit the representation of the Academy on the Council and Sectional Committees of the American Association for the Advancement of Science, but to commit the Academy to no financial obligations. The Executive Committee recommends that the Academy approve the general plan of affiliation and refer the matter with power to the Executive Committee for 1919-20.

Respectfully submitted,

EDWARD L. RICE,
Secretary, for the Committee.

Report of the Publication Committee

The following report of the Publication Committee was received and ordered filed.

May 29, 1919.

The Chairman of the Publication Committee reports the publication of the "Proceedings" mailed to members of the Academy several weeks prior to the date of the present meeting.

L. B. WALTON.

Report of the Trustees of the Emerson McMillin Research Fund

The following report of the Trustees of the Research Fund was received and ordered filed. The financial portion of the report was referred to the Auditing Committee, whose report is appended.

The Trustees of the McMillin Research Fund submit the following report for the year ending May 30, 1919.

RECEIPTS.

Balance on hand May 30, 1918, as per last report	\$913.52
May 23, 1919, Received from Mr. McMillin	250.00
	—————\$1,163.52

EXPENDITURES.

June 3, 1918, Liberty Bond, par value \$500.00 (held for safe keeping by the Capital City Bank, Columbus, Ohio)	484.95
Cash balance in bank, May 30, 1919	678.57
Total assets (Liberty Bond at par)	1,178.57

GRANTS DURING THE YEAR.

May 31, 1918, Professor J. S. Hine	\$ 50.00
February 3, 1919, Professor Walter H. Bucher	100.00
	—————\$ 150.00
Liabilities from previous grants	137.60
Total liabilities	287.60
Cash in bank in excess of liabilities	390.97

The Trustees announce that grants concerning which no reports of progress have been received will be cancelled at the end of the year.

Regarding the grant of \$100.00 to Professor Bucher, it may be desirable to explain that it was made for the purpose of relabelling a valuable and extensive collection of Naiades made by the late George W. Harper, of Cincinnati, and by him donated to the University of Cincinnati. All had been carefully labelled as to locality, but the labels were old, faded and many of them loose, so that there was great danger of their being hopelessly disarranged and permanently lost.

The grant of a portion of the research fund to secure the preservation of the collection is something of a departure from the usual practice, but the object to be attained seemed to justify it. It was agreed on the part of the Cincinnati authorities that the collection should forever be available for study by any member of the Academy whose qualifications for such work were properly attested by its officers.

T. C. MENDENHALL, *Chairman*,
HERBERT OSBORN.

May 30, 1919.

The financial portion of the report of the Trustees of the Research Fund has been audited and found correct.

RAYMOND C. OSBURN,
JOHN H. SCHAFFNER,
Auditing Committee.

Report of the Library Committee

For the Library Committee, Mr. Reeder, of the Ohio State University Library, presented the following report, which was received and ordered filed.

May 29, 1919.

To the Ohio Academy of Science:

The Library Committee begs leave to submit the following report:

(1) The sales of publications during the year amounted to \$13.90. This sum has been turned over to the Treasurer.

(2) Printed copies of the Annual Report of the Twenty-eighth Meeting, 1918, were received about two weeks ago, and copies have been mailed to all persons on the membership list as printed in that report, and to all institutions, societies and libraries on the exchange list.

(3) War conditions affected the exchange situation of the Academy as it did of all scientific organizations. Fewer publications were issued and transportation difficulties hindered their distribution. However, since the resumption of near-peace conditions, the foreign societies are informing us that they are now ready to resume exchange relations. Institutions in this country are active in completing files and more parts of the Academy's Proceedings have been sent out for this purpose than usual. Several of these libraries have been restored to the exchange mailing list.

(4) The status of the Union Catalog of Scientific Periodicals is about the same as outlined in the last report. Additional shipments of cards have been received from Oberlin College Library and the Western Reserve University College for Women. On account of the difficulties experienced by libraries in maintaining and meeting the extra demands for service during the war, no pressure has been brought to bear for additional contributions to the Union Catalog. However, it is known that several libraries have partially completed records ready for shipment, and are only waiting the completion of their periodical listing before depositing the cards with the Academy.

(5) The University Library desires to call attention again to its desire and willingness to serve the members of the Ohio Academy with scientific literature. Through the exchanges and regular purchases, there is maintained a library equipment which can serve in a very satisfactory way the scientists of this state, if they only will make use of the facilities offered to them, either directly through study in the library itself, or through the system of inter-library loan.

Respectfully submitted,

C. W. REEDER.

Report of the Committee on Legislation

The following report of the Committee on Legislation was received and ordered filed.

Your committee appointed to consider the matter of Legislation begs to report as follows:

We find that a number of State Academies receive state support either in the form of publication funds, or support of secretaries or other activities. In all states where such support is in force there seems to be agreement as to the advantage of such support and the only argument opposed to the plan is the possible interference with the entirely independent attitude of the academies as to matters affecting state activity.

The committee recommends that legislation to provide the following lines of support be requested at the hands of the next session of the general assembly and that the Committee on Legislation be authorized to arrange for the introduction of the necessary bills and to meet any necessary expenses incurred in the proper attention to their consideration.

First—A provision for the publication of the Proceedings of the Academy, preferably by the direct appropriation of an adequate sum for a creditable publication of not more than 500 pages per year, or, if necessary, as a part of the State printing.

Second—A provision for the compensation of a permanent secretary whose duty shall be to edit the proceedings, look after the activities of the society, the arrangement of details for scientific service to the State under the plan proposed in No. 3, and other matters of society interest.

Third—A provision that in consideration of the support provided as above, the academy agree to act in an advisory capacity in all matters of scientific concern in which the officers of the state may desire their services, such relation to be arranged through the officers and such committees as they or the Executive Committee may appoint, such services to include advice in matters of policy concerning state service of a scientific character and the recommendation of a special expert scientific assistance where needed.

HERBERT OSBORN,
MAYNARD M. METCALF,
EDWARD L. RICE,
T. C. MENDENHALL,
L. B. WALTON.

Election of Officers

The following officers and committee members for 1919-20 were elected by the ballot of the Academy:

President—Professor F. C. BLAKE, Ohio State University, Columbus.

Vice-Presidents:

Zoology—Professor F. H. HERRICK, Western Reserve University, Cleveland.

Botany—Professor A. B. PLOWMAN, Municipal University of Akron, Akron.

Geology—Professor J. E. HYDE, Western Reserve University, Cleveland.

Physics—Professor M. E. GRABER, Heidelberg University, Tiffin.
(Owing to removal from the state, Professor Graber was unable to accept his election and the Executive Committee appointed Professor J. A. CULLER, Miami University, Oxford to fill the vacancy).

Medical Sciences—Professor R. J. SEYMOUR, Ohio State University, Columbus.

Psychology—Professor G. R. WELLS, Ohio Wesleyan University, Delaware.

Secretary—Professor E. L. RICE, Ohio Wesleyan University, Delaware.

Treasurer—Professor W. J. KOSTER, Ohio State University, Columbus.

Elective Members of Executive Committee—Professor WILLIAM MCPHERSON, Ohio State University, Columbus; Professor L. G. WESTGATE, Ohio Wesleyan University, Delaware.

Member of Publication Committee—Professor J. H. SCHAFFNER, Ohio State University, Columbus.

Trustee of Research Fund—Professor G. D. HUBBARD, Oberlin College, Oberlin.

Member of Library Committee—Mr. C. W. REEDER, Ohio State University, Columbus.

Representatives on Editorial Board of Ohio Journal of Science:

Zoology—Professor R. A. BUDINGTON, Oberlin College, Oberlin.

Botany—Professor BRUCE FINK, Miami University, Oxford.

Geology—Professor G. D. HUBBARD, Oberlin College, Oberlin.

Physics—Professor S. J. M. ALLEN, University of Cincinnati, Cincinnati.

Medical Sciences—Professor F. C. WAITE, Western Reserve University, Cleveland.

Psychology—Professor H. A. AIKINS, Western Reserve University, Cleveland.

Election of Members

The Membership Committee reported twenty-eight names for election to membership; twelve additional names, previously approved by the Executive Committee and marked with * in the following list, were presented for ratification. All were elected as follows:

Aikins, H. Austin, Psychology, Western Reserve University, Cleveland.
Alexander, William H., Meteorology, Weather Bureau, Columbus.

*Ballin, E., Chemistry, 320 Burns Ave., Wyoming.

*Birch, T. Bruce, Psychology, 1115 N. Fountain Ave., Springfield.

*Bliss, Chester I., Entomology, Psychology, General Biology, Museum Technique, 316 W. Eighth Ave., Columbus.

*Breitenbecher, J. K., Zoology, Western Reserve University, Cleveland.

Bridges, James W., Psychology, Ohio State University, Columbus.

Campbell, Eva Galbraith, Biology, 141 N. Franklin Street, Delaware.

Churchill, D. C., Physics, Oberlin.

Courtright, Emma L., Biology, 1493 E. Long St., Columbus.

Coy, Genevieve L., Psychology, 317 W. Tenth Ave., Columbus.

Crane, Harry W., Psychology, 1827 Summit Street, Columbus.

Culler, Elmer A., Psychology, Ohio State University, Columbus.

Evans, J. E., Educational and Child Psychology, 31 Seventeenth Avenue, Columbus.

*Fox, Rolland D., Biology, 395 Doyle Street, Akron.

Gatewood, Esther L., Psychology, Biology, 440 E. North Broadway, Columbus.

Goudge, Mabel Ensworth, Psychology, 1827 Summit Street, Columbus.

Jones, C. Thompson, Psychology, Bureau of Juvenile Research, Columbus.

*Kindred, James Ernest, Zoology, 1353 E. Ninth Street, Cleveland.

Lampe, Lois, Botany, Washington C. H.

Mateer, Florence, Psychology, Bureau of Juvenile Research, Columbus.

Mitra, Swarna Kumer, Botany, 189 W. Eleventh Avenue, Columbus.

Morrey, C. B., Bacteriology, Ohio State University, Columbus.

Mosher, Edna, Entomology, Botany and Zoology Building, Ohio State University, Columbus.

- *Otis, Charles H., Botany, Adelbert College, Western Reserve University, Cleveland.
Pintner, Rudolf, Psychology, Ohio State University, Columbus.
Reamer, Jeannette, Psychology, 1751 Franklin Park, So., Columbus.
Ridenour, Alice Louise, General Science, London.
Rogers, A. Sophie, Psychology, Dept. of Psychology, Ohio State University, Columbus.
*Shollenberger, F. J., Physics, Mount Union College, Alliance.
*Skinner, Charles H., Physics, 102 University Avenue, Delaware.
Taylor, Mrs. Bayard, Botany, Ornithology, West Jefferson.
*Thomas, Edward S., Ornithology, 81 Ruggery Bldg., Columbus.
Toops, Herbert A., Psychology, Harrisburg.
*Trettien, A. W., Psychology, Toledo University, Toledo.
*Wagner, M. Channing, Physics, 941 Harriett St., N. W., Canton.
Weiss, Albert P., Psychology, Biology, Ohio State University, Columbus.
Wells, G. R., Psychology, Delaware.
Wood, Louise, Psychology, Bureau of Juvenile Research, Columbus.
Wright, Ivan G., Psychology, Lenox Hotel, Columbus.

The Report of the Committee on Necrology

The following report was presented by the Committee on Necrology:

But a single death in the Academy membership has been reported this year.

EUGENE RAY BURTON joined the Academy in 1915. He was born in Hamilton, Iowa, May 10, 1891. When he was about five years old, his family moved to Findlay, Ohio, where he spent his boyhood and prepared for college. In the fall of 1911 he entered Ohio Wesleyan University, where he received the degrees of B. A. and M. S. in 1915 and 1916 respectively. Before his graduation he served as assistant in Zoology, and remained as teaching fellow, 1915-16, and instructor, 1916-17. In the latter year he and his wife (Dorothy Walters Burton, also a member of the Academy) were in joint charge of the zoological work of the college during the absence of the head of the department.

The year 1917-18 was spent in a successful experiment as superintendent of schools in Felicity, Ohio; but Mr. Burton felt that Biology was his real field, and resigned his position to accept an instructorship in Marquette University Medical School, Milwaukee, Wisconsin. This work he was destined never to take up. Early in the summer of 1918 he moved to Milwaukee, where he died suddenly on August 14, following an operation for appendicitis.

And thus, at its very beginning, a life was suddenly cut off which gave promise of the highest success and usefulness. Mr. Burton was devotedly interested in Zoology and absolutely loyal to scientific truth. Instinctive powers of observation and a passionate love of the out-of-doors gave him exceptional ability as a field naturalist. His death is a real scientific loss to the Academy; to those of us who were

intimately associated with him the personal loss is even more keenly felt. Mr. Burton was an original stimulating student, a generous colleague, and a true friend, whom we can ill spare and never forget.

CLAUDE E. O'NEAL,
EDWARD L. RICE,
Committee.

Report of Committee on Resolutions

The following resolutions were presented by the Committee on Resolutions and adopted by the Academy:

1. The Academy wishes to thank the Local Committee and the professors and officers of Ohio State University for their aid in making the Twenty-ninth Annual Meeting a most successful one.

2. The Academy expresses its thanks to Mr. Emerson McMillin for his generous gifts in support of research work in Ohio.

3. The Academy thanks Mr. David Carroll Churchill for his interesting and instructive lecture on Airplanes.

4. The members of the Academy desire to express their appreciation of the work of our Secretary, which has so materially contributed to the success of this meeting.

T. C. MENDENHALL,
E. L. FULLMER,
Committee.

Amendment of Constitution

The following amendments of the Constitution, relative to the establishment of a class of Fellows, were unanimously adopted, notice having been given at the preceding Annual Meeting.

Article III, Section 1, amended to read:

The Academy shall be composed of Resident Members, Fellows, Corresponding Members, Honorary Members, and Patrons.

Article III, Section 2a, new section (to be renumbered when Constitution is reprinted), to read as follows:

Fellows shall be persons who are engaged in productive and scientific work.

Article III, Section 6, amended to read:

Only Resident Members, Fellows, and Patrons shall be entitled to vote in the Academy; only Fellows and Patrons shall be eligible to office and to membership in the Executive Committee.

Article V, Section 1, Paragraph (a¹), new paragraph (to be renumbered when Constitution is reprinted), to read as follows:

Fellows shall be elected by joint action of the Executive Committee and the Vice-Presidents; approval by three-fourths of the members of this joint committee shall be necessary to election.

Amendment of By-Laws

The following amendments of the By-Laws were adopted, changing the annual dues from one dollar and a half to two dollars, and rescinding the obligation upon the Nominating Committee to nominate two candidates for each office.

Chapter I, Section 1, amended to read:

No person shall be accepted as a Resident Member or as a Corresponding Member unless dues for the year are paid within three months after notification of election. The annual dues shall be two dollars, payable in advance. A single payment of twenty-five dollars, however, shall be accepted as commutation for life.

Chapter IV, Section 2, amended to read:

The Academy shall select by ballot a Nominating Committee, consisting of three members who shall nominate a candidate for each office, including elective members of the Executive Committee, the Publication Committee, and the Trustees of the Research Fund. Additional nominations may be made by any member of the Academy.

Committee on Legislation

The Committee on Legislation was continued, with power to add to its own membership if desired. The Committee was authorized to take such steps as may seem advisable, with the approval of the Executive Committee, to secure legislative support for the work of the Academy.

Section for Psychology

On request of the psychologists attending the meeting, the Academy authorized the formation of a Section for Psychology; and the Section was formally organized, with an initial membership of about twenty.

National Department of Public Works

An invitation was received from Mr. E. G. Bradbury, President of the Columbus Engineers' Club, to send a representative to the Annual Meeting of the Engineers' Club, Thursday evening, May 29, to report back to the Academy on the discussion of the proposed National Department of Public Works. The invitation was accepted; and Professor James R. Withrow was appointed to represent the Academy. At the adjourned business meeting on Friday, Professor Withrow presented the following resolution, which was adopted by the Academy:

Resolved, That the Ohio Academy of Science expresses its interest in any legitimate effort to render more effective the scientific and engineering work of the national government, and stands ready to approve and aid in any way within its power efforts at co-ordination of the public works of the national government which may be shown, to the Executive Committee of the Academy or to the Academy itself, to be an increase in scientific engineering effectiveness.

The Secretary was instructed to communicate the action to Mr. Bradbury, the Ohio representative of the national organizations which are backing this program.

Affiliation With A. A. A. S.

The general plan of affiliation, as reported by the Executive Committee, was approved by the Academy; and the incoming Executive Committee was authorized to proceed with the affiliation if found feasible.

Affiliation With Ohio Association of Technical Societies

The Executive Committee was instructed to investigate the desirability of an affiliation with the Ohio Association of Technical Societies, and to present a report at the next Annual Meeting.

War Roll

The President was instructed to appoint a committee of three to collect data concerning war activities of the membership of the Academy. The President appointed E. L. Rice, Chairman; J. S. Hine, W. J. Kostir.

Reprinting of Constitution, By-Laws and Circular of Information

The Secretary was instructed to have the revised Constitution and By-Laws reprinted in connection with the Report of the Thirtieth Annual Meeting, 1920, and regularly thereafter at five year intervals unless otherwise directed.

The Secretary was authorized to proceed at once with the revision and reprinting of the Circular of Information.

Expenses of Officers, etc.

The Treasurer was authorized to pay necessary expenses incurred by officers and committee members in attending regularly authorized committee meetings not held in connection with the Annual Meeting of the Academy.

The Treasurer was also authorized to pay the expenses of Mr. D. C. Churchill in connection with his lecture before the current Annual Meeting.

SCIENTIFIC SESSIONS

The complete scientific program of the meeting follows:

Presidential Address

"The Scientific Spirit".....M. M. METCALF

Public Lecture

"Airplanes, Present and Future" .. DAVID CARROLL CHURCHILL

Papers

1. The Theory of Chance Applied to the Bacon-Shakespeare Controversy.
30 min. (Lantern).....T. C. MENDENHALL
2. Teleology in the Teaching of Zoology. 15 min.....W. M. BARROWS
3. Dynamics and Evolution as illustrated in the Euglenoids. 15 min.
(Lantern).....L. B. WALTON
4. Notes on a Technique for the Study of Euglenidae. 5 min.....W. J. KOSTIR
5. The Comparative Resistance of Different Species of Euglenidae to
Acids. 5 min.....W. J. KOSTIR
6. Notes on a Tingid Destructive to Beans. 5 min.....HERBERT OSBORN
7. The European Corn Borer (*Pyrausta nubilalis*, Hubn.) a Menace to
American Agriculture. 10 min.....E. C. COTTON
8. The Stratification of Spiders in Meadows. 15 min.....W. M. BARROWS
9. Concerning the Attachment of Larval Colonies of *Pectinatella* and
Plumatella. 10 min.....STEPHEN R. WILLIAMS
10. Remarks on the Phylum Prosopygia. 10 min.....RAYMOND C. OSBURN
11. The Bryozoan Fauna of Greenland. 5 min.....RAYMOND C. OSBURN
12. Classification of the Salpidae. 15 min. (Opaque projection),
MAYNARD M. MATCALF
13. The Remarkable Fauna of a Drop of Pond Water. 3 min.....W. J. KOSTIR
14. Polymorphism and Allelomorphism in *Bruchus quadrimaculatus*. 25 min.
J. K. BREITENBECHER
15. Circulation of Coelomic Fluid in a Nematode. 15 min.....F. H. KRECKER
16. Egg Laying of a Leech, *Piscicola*. 10 min.....F. H. KRECKER
17. The *Columella Auris* of the Reptiles. 10 min.....EDWARD L. RICE
18. Information wanted in Zoological and Botanical Cases to be Cited.
5 min.....KATHARINE D. SHARP
19. Use of Airplane in Studying Vegetation. 15 min. (Lantern).....PAUL B. SEARS
20. A Map of Ohio Prairies. 10 min.....P. B. SEARS
21. Brief Notes on Some Ohio Plants. 10 min.....L. S. HOPKINS
22. A Remarkable Bud Sport of *Pandanus*. 6 min.....JOHN H. SCHAFFNER
23. The Nature of Dieciousness in the Hemp. 10 min.....JOHN H. SCHAFFNER
24. *Xenia* in Maize and Rye. 15 min.....A. E. WALLER
25. Some Biological Relations of the *Hysteriales*. 10 min.....BRUCE FINK
26. A Hitherto Undescribed Ascomycete. 10 min. (Lantern).....FRED A. DETMERS
27. Witches Broom of Bald Cypress. 5 min. (Lantern).....FRED A. DETMERS
28. Abscission of *Populus deltoides* (common cottonwood). 10 min.
(Lantern).....LOIS LAMPE, introduced by FRED A. DETMERS
29. Toxic and Antagonistic Effects of Salts on Yeast (*Saccharomyces ellip-*
soides). 30 min.....SWARNA K. MITRA, introduced by E. N. TRANSEAU
30. Two Serious Diseases of Wheat New to America.....W. G. STOVER
31. Some Future Industrial Centers in America as Seen by a Geographer.
30 min.....GEO. D. HUBBARD
32. Estimates on the Thickness of the Sedimentary Rocks of Ohio. 10 min.
T. M. HILLS
33. Some Geological Features in the Akron Region. 15 min.....G. F. LAMB
34. The Location of the Barrier Between the Ohio and Mississippi Valley
Basins in Richmond Times.....AUGUST FOERSTE
35. Some Aspects of the Waverly.....J. E. HYDE
36. The Pyrite Deposits in the Ohio Coals.....W. M. TUCKER

37. The Correlation of Ohio Silurian Strata with those of Indiana, AUGUST FOERSTE
38. Elongation of Nickel in Transverse Magnetic Fields. 10 min. H. A. BENDER
39. The Nature of the Lyophilic Colloids and Their Importance in Theoretical and Applied Science. 30 min. (Lantern)..... MARTIN H. FISCHER
40. The Prevention and Treatment of Pneumonia. 5 min.... E. F. MCCAMPBELL
41. Recent Advances in the Auditory Method of Measuring Blood Pressure. 15 min. CLYDE BROOKS
42. Vaccines and Serums in Coccus Infections. 10 min. C. B. MORREY
43. Five Years of Progress in Medical Entomology. 20 min. (Lantern), EDNA MOSHER
44. A Note on the Technic of Smear Preparations. 6 min. F. L. LANDACRE
45. Differentiation of Mucous and Serous Cells. 6 min., EVA CAMPBELL, introduced by F. L. LANDACRE
46. Note on the Effect of Dry Heat Upon the Blood of Guinea Pigs. 5 min. JONATHAN FORMAN
47. Observations upon the Complement Content of the Blood of Guinea Pigs which have been Subjected to Dry Heat. 5 min. CARL H. SPOHR
48. Observations on the Death of Guinea Pigs Induced by Dry Heat. 5 min., ERNEST SCOTT
49. A Model Illustrating Some Features of Urinary Secretion. 10 min. (Lantern)..... MARTIN H. FISCHER
50. The Muscle-Twitch Curve. 6 min. E. P. DURRANT
51. Vitamine Tests With Chicks. 5 min. R. J. SEYMOUR and E. P. DURRANT
52. An Anomalous Frog Heart. 3 min. E. P. DURRANT
53. A Modified Waterhouse Test for Pure Butter. 5 min. CHAS. P. FOX
54. Demonstration of Mendel's Law. 15 min. W. M. BARROWS
55. Observations on the Diagnosis of Contagious Abortion by Guinea Pig Inoculation. 5 min. W. A. STARIN
56. Fat Absorption in Earthworm, Salamander and Frog. 15 min. (Lantern), CHAS. G. ROGERS
57. The Normality vs. the Psychopathy of the Precocious Child. 20 min., FLORENCE MATEER
58. The Clinical Function of Psychology. 15 min. FLORENCE MATEER
59. Short Methods of Individual Examination Used by Psychologists in the Army. 25 min. JAMES W. BRIDGES
60. Psychological Study of a Delinquent. 15 min. LOUISE WOOD
61. The Very Bright Child. 5 min. C. THOMPSON JONES
62. The Moral and Religious Psychology of Late Senescence. 5 min., T. BRUCE BIRCH
63. Psychology Applied to the Problems of Everyday Life. 15 min. A. W. TRETTEIN
64. The Vocality of Fork, Violin and Piano Tones. 20 min. ESTHER GATEWOOD
65. Relations of Images in Recall to Directly Aroused Sensations. 15 min. A. SOPHIE ROGERS

Demonstrations

1. A Case of Apparent Triple Superfetation in the Cat. R. A. BUDINGTON
2. Growths on Glass Slides Submerged in Open Sea Water Ten Days, R. A. BUDINGTON
3. Exhibit of Ohio Cicadellidae. HERBERT OSBORN
4. Indications of Circulation of Coelomic Fluid Shown by Preserved Nematodes. F. H. KRECKER
5. Model of Nasal Region of the Lizard, Eumeces, ELVA PUMPHREY, introduced by EDWARD L. RICE
6. Sections of Columella Auris of the Lizard, Eumeces. EDWARD L. RICE
7. A Hitherto Undescribed Ascomycete. FRED A. DETMERS
8. Auditory Method of Measuring Blood Pressure. CLYDE BROOKS
9. Technic of Smear Preparations. F. L. LANDACRE
10. Model Illustrating Some Features of Urinary Secretion. MARTIN H. FISCHER
11. A New Muscle Lever. E. P. DURRANT
12. An Adjustable Spring-myograph. E. P. DURRANT
13. An Anomalous Frog Heart. E. P. DURRANT